

Key information for your AQA Biology GCSE Science

You are following the **AQA Biology Science GCSE** specification. This is worth 1 GCSE and will be graded from 1-9

Biology units

1. Cell biology
2. Organisation
3. Infection and response
4. Bioenergetics
5. Homeostasis and response
6. Inheritance
7. Variation and evolution
8. Ecology

How will you be examined?

You will take 2 exams at the end of the course, each lasting 1 hour 45 minutes.

Higher tier allows you to gain grades from 4 to 9. If you get a mark below the grade boundary for a 4 you will be given U (unclassified), unless you are very close when you will be awarded 4-3.

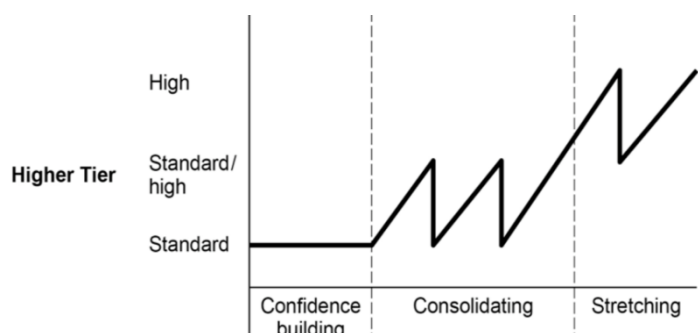
What is in each exam paper?

- Each exam will test different units. Below are listed the content of each of the papers.
- Also at least 15% of the exam questions will test your understanding of the 10 required practicals you have carried out in your Biology GCSE. This will include describing the method, explaining how to present results (graph to plot) and what information can be obtained from the graph. (Refer to your separate revision booklet we have produced to help you with your required practical revision).

Paper 1
What's assessed Topics 1–4: Cell biology; Organisation; Infection and response; and Bioenergetics.
How it's assessed • Written exam: 1 hour 45 minutes • Foundation and Higher Tier • 100 marks • 50 % of GCSE
Questions Multiple choice, structured, closed short answer and open response.

Paper 2
What's assessed Topics 5–7: Homeostasis and response; Inheritance, variation and evolution; and Ecology.
How it's assessed • Written exam: 1 hour 45 minutes • Foundation and Higher Tier • 100 marks • 50 % of GCSE
Questions Multiple choice, structured, closed short answer and open response.

How will the exams be structured?



- At the start. Standard demand questions (grades 4-5). These questions are the same as those at the end of the foundation level paper.
- In the middle, questions that start at standard demand and rise to high demand (grades 6-7). Dropping back to start at standard demand for the next question.
- Final questions are high demand questions (grades 8-9)

What resources can I use to help me revise?

- You have a revision guide given to you in year 10. Use it to revise for end of topic tests and to help with homework, so you start to familiarise yourself with it.
- Key notes in your exercise book
- Revision booklet outlining the required practicals (ready for Dec Mocks)
- Personal Learning checklists for each topic, so you know what you need to be able to do and can self-assess which parts you need to focus on more in your revision.
- Collated exam papers with answers for each module for final practice and revision (available for summer exams)
- KS4 Bitesize website.
- Doodle revision resources.

Mathematical skills tested

(Refer to your separate Maths skills booklet for detail and examples)

1	Arithmetic and numerical computation
a	Recognise and use expressions in decimal form
b	Recognise and use expressions in standard form
c	Use ratios, fractions and percentages
d	Make estimates of the results of simple calculations
2	Handling data
a	Use an appropriate number of significant figures
b	Find arithmetic means
c	Construct and interpret frequency tables and diagrams, bar charts and histograms
d	Understand the principles of sampling as applied to scientific data
e	Understand simple probability
f	Understand the terms mean, mode and median
g	Use a scatter diagram to identify a correlation between two variables
h	Make order of magnitude calculations

3	Algebra
a	Understand and use the symbols: =, <, <<, >>, >, α , ~
d	Solve simple algebraic equations
4	Graphs
a	Translate information between graphical and numeric form
b	Understand that $y = mx + c$ represents a linear relationship
c	Plot two variables from experimental or other data
d	Determine the slope and intercept of a linear graph
5	Geometry and trigonometry
c	Calculate areas of triangles and rectangles, surface areas and volumes of cubes

Key ideas that go through the syllabus

The complex and diverse phenomena of the natural world can be described in terms of a small number of key ideas in biology.

These key ideas are of universal application, and we have embedded them throughout the subject content. They underpin many aspects of the science assessment.

These ideas include:

- life processes depend on molecules whose structure is related to their function
- the fundamental units of living organisms are cells, which may be part of highly adapted structures including tissues, organs and organ systems, enabling living processes to be performed effectively
- living organisms may form populations of single species, communities of many species and ecosystems, interacting with each other, with the environment and with humans in many different ways
- living organisms are interdependent and show adaptations to their environment
- life on Earth is dependent on photosynthesis in which green plants and algae trap light from the Sun to fix carbon dioxide and combine it with hydrogen from water to make organic compounds and oxygen
- organic compounds are used as fuels in cellular respiration to allow the other chemical reactions necessary for life
- the chemicals in ecosystems are continually cycling through the natural world
- the characteristics of a living organism are influenced by its genome and its interaction with the environment
- evolution occurs by a process of natural selection and accounts both for biodiversity and how organisms are all related to varying degrees.

What required practicals do I need to know about?

Below is a list of the required practicals you need to know for your Biology GCSE.
Refer to the revision booklets to learn the method and outcome of them.

Required practical number	In which paper?	What does the required practical activity involve?
1	Paper 1	Using a light microscope to observe, draw and label selection of plant and animal cells. Magnification scale must be included.
2	Paper 1	Investigate the effect of antiseptics or antibiotics on bacterial growth using agar plates and measuring zones of inhibition.
3	Paper 1	Investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue.
4	Paper 1	Use reagents to test for a range of carbohydrates, lipids and proteins. To include: Benedict's tests the sugar; iodine test for starch; and Biuret reagent of protein.
5	Paper 1	Investigate the effect of pH on the rate of reaction of amylase enzyme.
6	Paper 1	Investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism, such as pondweed.
7	Paper 2	Plan and carry out an investigation into the effect of a factor, on human reaction time.
8	Paper 2	Investigate the effect of light and gravity on the growth of newly germinated seedlings.
9	Paper 2	Measure the population size of common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species.
10	Paper 2	Investigate the effect of temperature on the rate of decay of fresh milk by measuring pH change.